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Biotropy and the existential reconstruction of systemic space**

Abstract: In this study, I explore the profound impact of digital transformation on spatial relations and the human existential condition. I introduce the concept of *biotropy* as a necessary framework and hermeneutic practice for interpreting systems governed by both organic growth and algorithmic self-reflexivity. In this study, I use a four-coordinate matrix (space, territory, system, and ecosystem) to analyse the transition from material topography to strategic topology. Within this framework, biotropy bridges two essential processes: *autopoiesis*, which represents discursive development through self-referencing (Maturana 1980), and *biopoiesis*, which represents organic development through self-materialisation. In a world of increasing "digital systematisation," where the individual is often reduced to an algorithmic component, I advocate for an existential reconstruction of the hermeneutic subject. By navigating the shift from materiality to discursiveness, biotropy enables the subject to return to the ecosystem as an active agent of knowledge. Ultimately, this concept reterritorializes digital environments, offering a new understanding of the cohabitation between cybernetic structures and organic dynamics.

Keywords: Biotropics, topography, topology, systemic thinking, autopoiesis, concepts.

1. Notes on concepts and conceptual experience

One of the defining characteristics of a concept remains its speculative openness. I believe that, in the case of concepts, the most important things are not the references they establish in the order of discourse, but precisely the fact that they open up spaces for play at the level of all our modes of thought: in critical analysis, in speculative thinking, in hermeneutic practice and in existential reflection. This is one reason we relate to concepts as a series of representations to which we confer significant epistemological power. We consider them

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expressions that have a high degree of legitimation in our systems of thought.

Metaphysics, for example, always teaches us that a concept carries with it something of the materiality of first principles. For the metaphysical project, a concept represents both the starting point, often delimiting the preliminary tasks of thought, and the point of return, located where the hermeneutic circle of the speculative exercise closes. Moreover, Deleuze and Guattari define philosophy as a practice of constructing concepts (Deleuze 1991). What is more important in our acts of knowledge is that they start from concepts and return to them.

That is precisely why, whether it is about truth, happiness, freedom, space or time, a concept becomes a reference from at least three perspectives:

1. First, we are dealing with a fundamental reference point for our projects of understanding. Its open character always keeps the primary interpretative task active, which insinuates itself in any act of understanding.
2. Then it serves as a reference point for each of our existential conditions. I can only be the subject of my inner life within the horizon of a conceptual openness, which I feel is decisive for the condition of my thinking and actions.
3. Then, not least, a concept becomes a reference point for the programs of strategic reason. Policies and strategies are always oriented by a set of conceptual boundaries. Otherwise, they risk falling into circular methodologies, through which we formulate methods for the sake of method.

In the context of the three perspectives, the fact that I cannot define a concept categorically leads me to remain open to a strategic interpretive decision, whether it concerns my own existential condition or a practice in action. Thus, I believe that I must keep active this hermeneutic strategy, through which we give primary authority to concepts, but I also believe that the legitimacy of concepts comes from their being always dynamic and open. Concepts gain their decisive character because they take the form of the horizon more than that of the pillar.

The epistemic experience of a concept also becomes an existential experience of the type of reporting to the common place. In the order of concepts, I relate to knowledge in the space of openness. The concept places me under the sign of perspectives, horizons, play spaces, topologies and topographies. Beyond the a priori character of space, as an intuition of sensitivity in the Kantian sense, I am also a subject of space, which I project, material and immaterial, into the openings of my ideas and representations. Space is a composite of a priori sensitivity, phenomenological experience, existential condition and symbolic

projection. I can consider this place of intersection as an area of constituting the concept in the form of a spatial system. Before being language, before being representation or episteme, or precisely in the perspective of language, representation and episteme, the concept is the spatial openness that it provokes in the inner exercise of the subject of knowledge. This is the first systemic cut I make at the level of the spatial constitution of conceptual experience. Face to face with a concept, the subject of knowledge sees himself placed in a spatial experience, even before he settles into a discursive one.

In such a configuration, some concepts are given; others must be addressed on the basis of epistemic tasks that, at the beginning, have an indeterminate character. These concepts are not only new and unique but also indeterminate.

2. About the concept of biotropy

Biotropy becomes the task of an indeterminate conceptual opening. As I have already said, in certain speculative projects, the need arises to establish new conceptual openings that, at first, have an indeterminate meaning. I need these conceptual openings, especially when I take on new tasks of exploration and interpretation. In the first stage, such new tools are useful mainly for their indeterminate character and the exploratory opening they allow in the interpretive process. Biotropy is such an indeterminate concept that I need to delimit a new speculative space through it.

Referring to the idea of space, the concept of territory, and the dynamics specific to systemic relations, I need a speculative openness to explore the idea of territory, interpreting and organising it as a biosystem. I need these reconfigurations, especially in a world where digital systems tend to reorganise our spatial relations, ways of dwelling and strategic practices of organising territories. The conceptual field of the digital ecosystem must be formalised and reterritorialised from the perspective of a consolidated experience of the knowing subject. In other words, I need to reformat digital systems to make room for the conceptual experience that the subject has in the production and transfer of knowledge.

In addition, digital transformation usually leads us to relate to systems and think in formal, structural terms. Thus, the need for this new concept also comes from the need to discuss systems in terms of the organic dimension of their development, especially when we are dealing with self-generating systems. In this sense, biotropy becomes a speculative container in which I try to organise the idea of location in space, in relation to a certain organic and, at the same time, systemic experience of habitation and the transformation of space into territory.

The openness that I have in mind in the horizon of this concept relates to two ecosystem phenomena that seem important.

1. A first phenomenon is that a socio-economic ecosystem develops in an area, transforming it into a territory, yet the spatial organisation tends to remain organic.
2. Another phenomenon is that the organic evolution of a material system leads to the organic development of knowledge at the system level.

These two phenomena transform a system into an ecosystem, triggering processes of organic growth of both material (ontological) reality and internal practices of knowledge. Thus, through biotropy, I am interested in bringing together the idea of an automorphic system of the autopoiesis type and the idea of a self-referential system of the biopoiesis type. Along these lines, biotropy describes the constitution of an ecosystem defined by its material topography and its discursive topology. Biotropy becomes a practice and a project of interpreting the relations between the ontology and epistemology of a system at the level of its organic development.

In this context, I refer to automorphic processes as phenomena of organic growth of specific structures, and I consider self-referential processes as practices of knowledge through self-interpretation. Thus, biotropy represents the practice of interpreting an ecosystem defined by two specific processes:

- *Autopoiesis*: represents the discursive development of a system, as an effect of a process of self-virtualisation and self-referencing.
- *Biopoiesis*: represents the organic development of a system, as an effect of a process of self-materialisation and self-sustainability.

3. Topography and topology, as dimensions of bitropic analysis

But to establish a point of reference for exploring the idea of biotropy, I will start from two notions directly related to the description and organisation of space: topography and topology.

Thus, I have in mind, first of all, the idea of topography and its double meaning. In a first meaning, topography is about the delimitation of a space as an area and the description of the quantitative spatial relations in that area. The second meaning of topography refers to the ways in which space and habitation are transformed into a territory. In the first meaning, it is about topography in a descriptive sense; in the second, I have in mind especially the ways of practical operationalisation of topography.

In addition to this double meaning of topography, I must consider the idea of topology. As I have already stated, topography produces the tools for describing space as an area or territory. In comparison,

topology considers two other dimensions: the system of space and the strategies of spatial organisation. In general, topology refers to a strategic approach to optimising the understanding and organisation of spatial systems.

Thus, on the chain of conceptual projection, I obtain two meanings of topography (as spatial description and as a narrative of the territory) and two meanings of topology (as a systemic methodology and as a strategic practice). Along the lines of these meanings, I can establish four sequences of exploration and understanding of spatial experience that I will sequence in the form of the following matrix:

1. In a topographic sense, in biotopic analysis, space becomes a territory,
2. Also, in a topographic sense, the territory can then be understood as a system,
3. In a topological sense, biotopic analysis organises the system as an ecosystem,
4. The ecosystem can then be interpreted as a strategic biosystem.

The four sequences become a matrix for the interpretation and systemic organisation of psychosocial spaces. Space, territory, system, and ecosystem establish four coordinates through which the social fact can be thought of as biotropy, understood as ecosystems determined simultaneously by cybernetic processes and organic dynamics. A biotopic ecosystem is a system in which knowledge tends towards a cybernetic organisation, but ontology develops in an organic sense.

Next, in order to define the meanings of the four coordinates of biotropy, I must consider the meanings that topography and topology acquire in the modelling of spatial experience. I will also consider the duality defined by the relationship between the digital and organic reality of biotopic ecosystems.

4. The direct meaning of the idea of topography

Topography defines the set of theories and practices for analysing and describing spatial systems through graphic representations and algorithmic constructions. In the simplest possible way, I consider a topographical action when I graphically present a space, in a descriptive system with the highest possible degree of relevance to the reference space. And, when I speak of the relevance of this type, I refer to the biunivocality of the operation of translating the reference system into its graphic representation, so that I can understand the representation as referring directly to the space in question and to understand the space as the primary reference of the representation obtained. Thus, topography is the activity that comes closest to the idea of literality and direct correspondence of space. The map becomes symmetrical in

relation to space. As Jorge Luis Borges allegorically spoke of the map that perfectly overlaps the territory. Reducing it to scale does not remove it from a game of total correspondence. Space becomes a map, and the map becomes territory.

From this point of view, topography establishes codes and algorithms for immediate translation. Topographic relevance and pertinence are linked to the idea of direct correspondence with the reference. I think that, in the case of topography, we have in mind especially the idea of truth through correspondence. From this point of view, I can use the idea of topography as a tool for direct, material translation. Topography best expresses the materiality of the space it represents.

In this first phase, biotropy overlaps the primary meaning of quantitative analysis, which we find in the topographical practice of constituting spatial materiality at the level of the representation system. In relation to topographical practices, biotropy retains the practices of quantitative analysis but assimilates them into the material translation of space. The operation of biotropic translation does not deconstruct the materiality of space, but distributes it in the discourse of the map, transforming biotropy into a material cartography of space.

5. The strategic meaning of the idea of topography

Beyond the material translation of space, in relation to the topographical action, biotropy also integrates the strategic organisation of action into its interpretative project. The material translation of quantitative space acquires strategic effects precisely in the action of referencing. The topographical relationship between map and space is originally material, but it becomes strategic. In relation to the area it represents, the map transforms space into a territory. Precisely because the topographical relationships with the represented space are the closest to the material dimension, the map becomes a strategic instrument of territorialization. If the primary topographical meaning of biotropy is that of the materialisation of space, its strategic task is that of territorialization.

This is precisely the process by which space also becomes a strategic relationship of first instance in discourse, alongside the time of predication. We always start from the idea that discourse is grounded only by the time of predication, expressed by the predicative relation S is P . As a discursive operation, biotropy opens the reference space from the function $P(S)$ and transforms it into a discursive action of strategic territorialization. Territory becomes the internal mark of the birth of the first expression of language. S is P represents not only a chronological

function, but also a space of play, and this phenomenon is part of the digital genetics of ecosystems.

Through the concept of biotropy, I am interested in operating these transitions from the materiality of space to its discursiveness. Gaston Bachelard is the first to speak of an existential experience of space. Bachelard refers to an existentialism based on aesthetic emotion, but one grounded in rhetoric and a set of discursive practices (Bachelard 1958).

In interpreting topographic translation practices, space becomes a system and is constituted as biotropy through this material translation of spatiality into discursive territory. At the same time, the discursive translation of the materiality of space opens the perspective of a topological analysis at the level of the biotrophic system. Thus, space, as a topographically analysed system, becomes an ecosystem interpreted in a topological sense.

6. The extended meaning of the idea of topology

Topology is a scientific discipline, or even a science, developed mainly in the field of mathematics (Mendelson 1962). In the most general way, topology defines the geometry of the relations between the components of a well-defined set. Operationally, it is an organisation of topos (places) in the space of relations between these coordinates, either quantitatively or qualitatively. In addition, the concept of topology is also loaded with its etymology, which also designates a theory of space. Logos, as thinking, and topos, as place, designate, by joining, a thinking oriented towards the organisation of a spatial system.

In my speculative project, I am interested in three components that I find here. Thus, I will use the following coordinates:

- **Systemic organisation:** in the horizon of the consolidated meaning of topology, beyond geometric organisation (more geometrico), space is also defined as a system of organisation of given elements, defined as reference entities;
- **Structural synergy:** in the spatial sense, topology defines the relationships between the components of a system in quantitative, qualitative, and mixed perspectives, which relate to the interaction between quantitative and qualitative relationships, and this defines the reference system as structural topology.
- **Topological cybernetics:** from an operational point of view, topology is a geometry, an arithmetic (an algebra), but also a cybernetics, as long as its operationalisation also depends on the dynamics of the relationships between the component entities.

7. The systemic meaning of the idea of topology

I discussed the systemic openness at the level of the predication function, which underpins phrasal and discursive production. We said that S is P implies not only a chronological incipit, but also a spatial one. This spatial openness is a topology, more than a topography. At the chronological level, the predication function gives birth to language as a starting point for the constitution of referencing and narrativity. At the topological level, the predication function is the first micro-system of organising language as a system of discourses. Topology is that biotrophic openness through which we can analyse the ways in which language becomes a discursive system.

The topological perspective is the conceptual openness within the horizon of which biotropy organises spaces as strategic systems and ecosystems of the relationship between the cybernetic, discursive and organic dimensions. Space presents the most important characteristics of organic systems:

- (1) Space assumes a systemic isomorphism between structure and growth processes,
- (2) Space is drawn by both uncontrollable dynamic processes and multi-level strategic organisation,
- (3) The material and immaterial dimensions of space coincide in terms of functions, inputs and outputs,
- (4) The system's general ontology is a black box, leaving only its inputs and outputs visible.

8. The existential meaning of biotropy

Going through this whole process of topographic and topological reduction and deconstruction, I must return with a working question. Why do I need all this exercise of conceptualising biotropy? Why is it not enough for me to talk about space in its systemic topography and its ecosystem topology? Why do I need all this speculative exercise of constituting biotropy?

The internal task of this interpretative excursion is that the history of our societies has reached a crucial point: digital systematisation. The digital transformation represents a fundamental stage in the history of our existential condition, both at the collective and individual levels. This profound change produces a systemic modification in the way we organise our ways of thinking, representing and acting. The digital transformation is increasingly constituted in a general process of systematisation. It is such a profound phenomenon that everything changes fundamentally.

In this context of digital systematisation, it is up to me, at least internally, to reorganise my own existential condition in the general ecosystem of knowledge and actions. But in line with this existential reorganisation, I must return to the ecosystem from a different self-referential position. In the general ontology, digitalisation formalises me and transforms me into an algorithmic component of the system. I must exit this cybernetic role of the system and return in the guise of the subject, in the general economy of things. I must return to the ecosystem as the subject of the ecosystem, doubling my role as discursive input with a new constitutive existential experience.

Carefully and without any unnecessary urgency, I must retrace the course of a radical suspension of interior experience. If I were to configure this suspension as a maieutic, the guiding principle of “I know that I do not know” will become the working horizon for a constitutive experience given by the idea that “I know that I no longer know anything about myself.” If, on the other hand, I were to place this radicalisation in the order of absolute doubt, I would notice an interesting detail: this time it is not the subject that claims itself as a participant in the *res cogitans*, but cogitation as such that claims its existential subject.

Decentralisation and digital transformation provide me with a new ecosystem as an ontology of reality. In one form or another, I will find the strategies to relate to this new reality. Even if we are definitely thrown into a digitalised society, we will find the right ways to re-establish realities in the structures that are specific to us. But, beyond the general effects of existence, a phenomenon has emerged that seems interesting to me: this time, I am the ghost in the machine, and I must open the existential horizon for a project of understanding this situation that is now irrelevant and indeterminate to me.

I need to retrace the path of my own understanding and retrace it in a totally unknown horizon. That's exactly why I opened this file on biotropy. Because my inner experience becomes biotropic in new ecosystems.

I believe that, within the horizon of this biotropy, my existential condition has the task of understanding its new alterity. A systemic alterity, this time. From the position of an identity that is now a coexistence between one's own person and collective humanity, I must go through the speculative and reflexive exercise of reconstituting alterity. The speculative story becomes a simple one: faced with an alterity that seems to be ecosystemic, my composite inner subject (both as an individual and as an intersubjectivity) reorganises its constitutive existential experience in the indeterminate field of biotropy.

Digitalisation becomes a problem of existential reconfiguration both of one's own person and of the interval of relationship with reality and

with digitalities. The strategic meaning of biotropy is to develop a particular tripartite hermeneutics at the level of ecosystems in the new field of relations among subject, object, and systems.

9. Material body and immaterial self

Before projecting an understanding of the strategic dimension and systemic condition in the case of biotropy, I first want to talk about the person as a material body and immaterial self. Until Jean-Paul Sartre, along the lines of the Christian conception of the world, confinement in the body referred to the idea of a critical connection with the world, based on a materiality considered either damned in the constitution of moral existence or limiting in the field of knowledge. The body was above all the space of the fall into materiality, in opposition to spiritual life. There are also speculative projects of recovering the body on a spiritual level, but, in general, European man had an ethical distrust of his bodily existence. Sartre speaks for the first time about the existentialist experience of being a subject in a body, at the level of the distinction between being-in-itself and being-for-itself (Sartre 1943). Beyond Sartre's existentialism, Merleau-Ponty speaks of the body-vehicle, considering that, based on this primary materiality, the experience of the body precedes any self-perception and even any representation (Merleau-Ponty 1945). Here appears the dual meaning of the body, material vehicle and preliminary field for self-perception.

What seems most interesting to me is that both authors meet in the area of a phenomenological analysis of the experience of corporeality, even though they come from two different traditions. Thus, based on a phenomenological condition, but also from an existential point of view, I can say that there are at least two ways in which we relate to our own organic condition. We are a material body and an existential (immaterial) one. When we are a body, we are mainly interested in our biological function. Thus, we are a body in motion, we are a physiological body, which we organise medically, we are a social body, which we organise along the lines of quality of life. I am a body of time, I am a body for other bodies. I am an organic engineer who can express and manage the body as a whole, ensuring it is secured, optimised, and preserved as much and as well as possible.

On the other hand, along the same lines, we know that when we are existential bodies, our condition becomes reflexive. A second-instance existential condition. Thus, when we are immaterial bodies (*persona*), it matters for us how we relate to having a body and being a body. The immaterial self insinuates existentially in the dynamic interstice between having a body and being a body. If, more geometrico, we are rather bodies, existentially we are above all bodies. And things become

interesting, especially in their circumstances. We are rather bodies in which our experience is constituted as an existential condition of the relationship with our own body.

At this point, things get more than interesting. This is where I become the other in the sense of the alterity. The place where the experience of myself is constituted as an experience of otherness. Small otherness. Minimal otherness. But it is a minimal otherness not because it does not matter much, but, on the contrary, because it is the closest to me and becomes constitutive of me. Technically, in an act of minimal otherness, I become a body, especially when I consider myself not in the form of my body as such, but in relation to a body that I am told is mine and, above all, that it is me and that it represents me.

I have made all these clarifications to remind myself that alterity is the foundation of my identity as a subject. It is the basis of the constitution of the social body and the social fact, and is the cornerstone of my relationship to my own existential condition. Preliminarily, my existential condition is constituted as incipient alterity.

10. Immediate alterity as the horizon of biotropy

In the space of European representations and, even more so, in the Eastern worlds, the thought of otherness is constitutively present in any project of speculative thinking and even in any project of rational organisation of our existence as such. The conceptual field of the idea of otherness is extremely broad, and it is easy for me to believe that the idea of otherness is incorporated even into our language acts. We can hardly talk about ideas or values that are important to us that do not refer, in one form or another, to the idea of otherness. In addition, in our European space, along the lines of Christian metaphysics, we have always put into play the gradual meanings of the idea of otherness. Because, positively, but too often even negatively, otherness involves different degrees, different practices and different forms of valorisation. We know all too well that a playing space of relations with otherness is never a compact territory, with the same degrees of reporting and valorisation.

In this fundamental regime of experience of otherness, the emergence of digital reality produces a total reconfiguration. In a first sense, biotropy is the project of reconfiguring the experience of otherness in ecosystems determined by digital transformation.

11. A systemic closure of the concept of biotropy

From this perspective, I can also establish an operational meaning of biotropy as both a model and a practice. Along the lines of its

establishment as an autonomous science or as a decentralised practice of knowledge, biotropy must, for now, be defined as a hermeneutics of systems determined by organic growths. In the first instance, this should be the definition of biotropy:

Biotropy represents the hermeneutics of systems determined by organic growth and processes of dynamic algorithmic self-reflexivity.

In a conceptual sense, biotropy is defined at the intersection of systemic thinking, the experience of material and immaterial space, reflexive alterity, digital reality, the organic character of self-generative worlds (of the autopoiesis and biopoiesis type), ecosystem cognition, topological hermeneutics, and topographical pragmatics.

I would also establish a first constructive meaning of biotropy. Thus, the concept of biotropy opens the perspective of a cognitive hermeneutics of ecosystems, understood as self-generative systems from both organic and digital perspectives.

Starting from these definitions, I believe that biotropy must be built on the thread of restoring the subject, both in relation to the world of objects and to oneself and one's existential condition.

Gunter Anders, in *The Obsolescence of Man*, recounts being accused of ideological romanticism for using the human concept of man (Anders 2025). It seems to me that such circularity also sets in motion the idea of the subjective condition, rooted in the subject's existential experience. The human concept of man deconstructs the idea of man in its very conceptual system. Likewise, the idea of the subject's subjectivity reconstructs the network of alterities that the subject now needs as a human and as a person of knowledge.

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